TB 43-0211*

AOAP
ARMY OIL ANALYSIS PROGRAM

Guide for Leaders and Users

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*This publication supersedes TB 43-0211, dated 4 November 1998

15 April 2002

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ARMY OIL ANALYSIS PROGRAM

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**Supersedes TB 43-0211 (4 Nov 98)*

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I Introduction

PURPOSE

This publication provides personnel involved in the Army Oil Analysis Program (AOAP) with an understanding of how it works and what is needed to make it work.

Discussed are the people, paperwork, and processing procedures that make the AOAP an indispensable maintenance diagnostic tool for the Army's maintenance team. Section IV provides answers to frequently asked questions.

As you read this publication, note your questions on its content or your suggestions for improvement. If your AOAP monitor is not able to help, contact the Program Director (PD), AOAP, at the Commander, USAMC Logistics Support Activity, ATTN: AMXLS-LA, Bldg 3623, Redstone Arsenal, AL 35898-7466 or e-mail address aoap@logsa.army.mil, call DSN 645-0869 or (256) 955-0869 or fax DSN 746-9344 or (256) 876-9344

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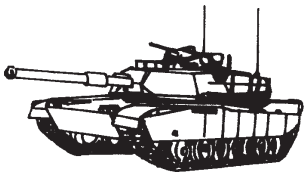
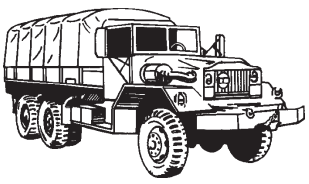
II General

WHAT IS AOAP?



Tanks

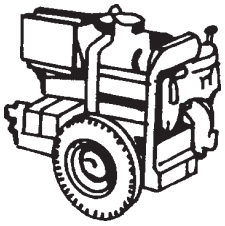


Wheeled Vehicles

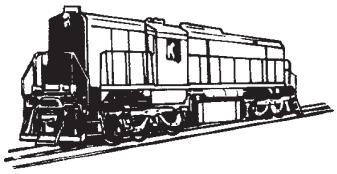
AOAP is part of a Department of Defense effort to detect impending equipment component failures and to determine lubricant condition through online and periodic analytical evaluation of lubricants. The AOAP includes various condition-monitoring techniques, such as spectrometric oil analysis, ferrography, and online or in-line fault analysis, to determine the internal condition of engines, gearboxes, transmission, and other lubricated systems or components. It is a mandatory maintenance tool for all aeronautical and selected nonaeronautical equipment in the Army inventory. Like other maintenance tools, it must be used properly to be effective.

Samples are taken from over 400 types of equipment in active Army, Reserve, and National Guard units.

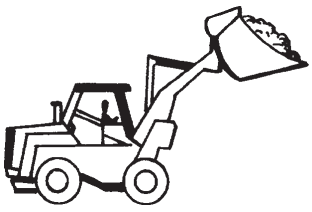
SP Artillery



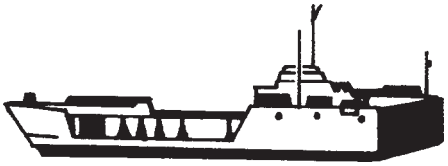
Generators



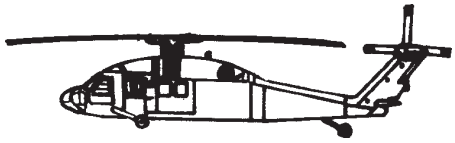
Locomotives



Construction Equipment



Watercraft



Aircraft

WHAT IS SAMPLED AND WHEN?

Hundreds of different end items are included in the AOAP. They are identified and listed individually in Department of the Army (DA) Pamphlet 738-750, Functional Users Manual for The Army Maintenance Management System (TAMMS), and Technical Bulletin (TB) 43-0106, Aeronautical Equipment, Army Oil Analysis Program. DA Pamphlet 738-750 identifies nonaeronautical equipment and TB 43-0106 lists aeronautical equipment. In addition to identifying equipment and components to be sampled, these publications list the routine sampling intervals and under what conditions special sampling is needed, sampling techniques, supplies, and records management.

See DA Pamphlet 738-750 and TB 43-0106 or log in to LOGSA's AOAP page at http://weblog.army.mil/aoap/openpg.htm for a complete list of special sampling requirements and instructions.

SPECIAL SAMPLES ARE TAKEN:

- **AT LABORATORY REQUEST**
- **IMMEDIATELY BEFORE TRANSFER AMONG COMMANDS OR OVERSEAS DEPLOYMENT**
- **AFTER INDICATION OF PROBLEM OR CONTAMINATION**
- **AFTER MAINTENANCE, OVERHAUL, OR REPLACEMENT OF A COMPONENT PRIOR TO OIL OR GREASE CHANGE**
- **AFTER AN AIRCRAFT ACCIDENT**
- **IMMEDIATELY FOLLOWING AN IN-FLIGHT FAILURE**
- **WHEN DEEMED NECESSARY BY UNIT COMMANDER**

WHAT AOAP CAN DO FOR YOU

It doesn't take long to sample the lubricants in a piece of equipment, and that action can save hours of maintenance downtime through early detection by the laboratory of such problems as faulty air-induction systems, leaking cooling systems, loose crossover fuel lines, and abnormal wear rates of moving metal parts. That sample also gives the laboratory technical information about the quality of the lubricant or hydraulic fluid, and that translates to savings through laboratory-recommended oil changes (on-condition).

A sample, properly taken and sent to the laboratory, gives the commander information about equipment condition and maintenance quality. That is an investment in readiness, and it takes the cooperation of all concerned to make it pay off.

Close contact among the laboratories, Logistics Assistance Office (LAO) representatives, and maintenance personnel concerning AOAP-identified equipment problems has improved maintenance throughout the Army.

Equipment reliability is improved through AOAP. Design changes and product improvements have been proposed on the basis of oil analysis findings.

By detecting the signs of impending failure at an early stage, maintenance can be performed at a lower level, thereby reducing the number of catastrophic failures and associated rebuild costs. In the short run, this decreases maintenance support costs. In the long run, it improves readiness and enhances safety by reducing the number of not mission capable (NMC) items.

AOAP IN ACTION

Laboratory recommendations for maintenance actions are correct approximately 98 percent of the time. Two percent of AOAP recommendations have been determined as problems in an associated part, like an oil cooler. This means that of the thousands of AOAP recommendations made every year, there are only a few occasions when analysis of used oil does not correctly identify the problem. This translates into a cost savings totaling millions of dollars in terms of replacement hardware and manpower. Savings are also realized in oil costs. Numerous studies conducted on the AOAP have indicated the program does provide the Army a significant cost avoidance in the areas of equipment maintenance and savings in lubricant use. Lubrication orders

(LOs) are being rewritten to include the requirement for on-condition or laboratory-recommended oil changes for nonaeronautical equipment.

On-condition means the laboratory tells the unit when oil has become contaminated and should be changed. In most cases, the oil's useful life is extended, and that is good. But a word of caution-WARRANTY. Follow the manufacturer's recommendations for oil and filter changes for equipment under warranty. If the laboratory recommends you change oil more frequently than recommended by the manufacturer, that is OK. But you CANNOT make changes less frequently than required by warranty.

NOTE: The manufacturer's recommended hard-time oil filter change intervals will be followed as directed by the appropriate technical manual (TM) or LO.

Seasonal and special oil changes must still be made if called for by the LO.

AOAP enrolled nonaeronautical equipment with a hydraulic system that has a capacity of 5 gallons or more (excluding sealed hydraulic systems) and a designated fluid change interval established by an LO will be sampled. This equipment is identified in DA Pamphlet 738-750. A link to this is available at

http://weblog.army.mil/aoap/relpub.htm

The laboratory will determine if fluid change is necessary.

Of course, to realize the benefits of AOAP, the laboratory, the field units, and AOAP monitors must work hand-in-hand.

WHO MAKES AOAP WORK?

The most important ingredient in the success of the AOAP is people who believe in the importance of the program and are willing to spend their valuable time to make it successful.

MAJOR ARMY COMMAND (MACOM), DIVISION, BRIGADE, AND BATTALION COMMANDERS

Through use of the expertise your AOAP people provide, and informative maintenance data available on your monthly reports (provided by the laboratory), you have the capability to ensure the success of the AOAP.

You should emphasize and actively promote the program and display firm command interest in this vital maintenance management tool.

One of the most important tasks you have is to appoint a command representative to monitor the AOAP within assigned units. This representative plays a key role.

COMMAND/INSTALLATION AOAP MONITOR

You are the commander's representative in all AOAP functions at your command or installation. You are the primary go-between for the laboratory and all elements of support at your installation.

Experience has shown the effectiveness of your program depends on you. Reports produced by the Oil Analysis Standard Interservice System (OASIS) at the laboratory provide an excellent record of what is going on at your installation. Make sure your units receive the reports on time and use them in their daily routine.

You ensure the laboratory promptly notifies units of possible abnormal conditions by telephone and documented follow up.

Make sure the laboratory has your name, address, and phone number. You, in turn, should maintain a complete list of the names, addresses, and phone numbers of the unit monitors in your support area.

Work with the laboratory and your maintenance support facilities to make sure laboratory-recommended maintenance is being performed and feedback supplied.

Organize formal training for AOAP monitors and make AOAP performance part of your command inspection programs. You and your commander are the people who can make the program work for you.

COMPANY-LEVEL MONITOR

It is up to you to make sure adequate supplies of forms and sampling materials are on hand and personnel are trained in the proper way to take samples and accurately fill out DD Form 2026 or Unit Level Logistics System (ULLS) DA Form 5991-E, Oil Analysis Requests as outlined in Section III, Procedures, of this publication.

Each unit, from company through division/installation, should have a monitor appointed by the appropriate commander. At company level, it might be the motor sergeant, although any responsible person can be given the job.

As the AOAP monitor, you are the liaison between the unit and the laboratory, and you should develop a close working relationship with the laboratory chief.

It's your responsibility to make sure your unit's program is organized correctly.

Make sure your unit is using the monthly routine reports, as needed, to effectively manage your participation in the program. If incomplete or incorrect information appears on the reports, make sure it is corrected and returned to the laboratory as soon as possible.

Once you have a good sample, make sure it goes to the laboratory by courier or First Class/Priority mail. If the laboratory requests a resample, make sure the resample gets to the laboratory immediately.

The laboratory will use a DA Form 3254-R, Oil Analysis Recommendation and Feedback, to notify the unit of an abnormal sample, and recommend an AOAP maintenance action or recommend a piece of equipment be removed from service. Get the word to the users **immediately**.

Make sure the unit performs the maintenance and the laboratory is notified by completing and returning the DA Form 3254-R lab sent within 5 days of work accomplishment.

When work is beyond the unit's capability, be sure properly annotated DA Forms 3254-R and 2407 or ULLS DA Form 5990-E (Maintenance Request) are forwarded to the Direct Support (DS) unit.

Make sure your unit promptly notifies its supporting laboratory of the transfer-in or transfer-out of AOAP designated equipment.

In short, your responsibility is to monitor all phases: training, performance, and the follow-through of the program in your unit.

UNIT COMMANDER

As unit commander, you will be relying heavily on your maintenance officer and AOAP monitor, so your first job is to ensure you have well-trained personnel in those slots.

COMMAND ACTIONS THAT ENSURE SUCCESS:

- **AOAP TRAINING IS BEING PERFORMED**
- **ADEQUATE SAMPLING SUPPLIES ARE MAINTAINED**
- **SAMPLES ARE TAKEN AS SCHEDULED**
- **SAMPLES ARE BEING FORWARDED EITHER BY COURIER OR 1ST CLASS MAIL**
- **PROMPT/PROPER ACTION IS TAKEN WHEN AN ABNORMAL REPORT IS RECEIVED**
- **MAINTENANCE FEEDBACK IS BEING SUPPLIED TO THE LABORATORY**
- **PROPER FORMS ARE SENT TO DS/GS UNITS FOR EQUIPMENT BEING REPAIRED**

UNIT MAINTENANCE OFFICER

As maintenance officer, you ensure your maintenance personnel review and comply with all AOAP publications and the unit standing operating procedures (SOP) as it applies to the program.

When maintenance is performed on components at the recommendation of the laboratory, be sure your unit has entered deficiencies found and actions taken on the DA Form 3254-R. The form must be sent to the laboratory within 5 days of work completion.

When laboratory-recommended maintenance is above your level, be sure the two AOAP labels (provided by the laboratory) and properly annotated DA Forms 3254-R and 2407 or ULLS DA Form 5990-E accompany the equipment to the next higher level of maintenance.

If the component is placed in a container, AOAP labels should also be affixed to two opposite sides of the container for easy identification.

UNIT EQUIPMENT OIL SAMPLER

As the person taking the oil sample, you are the heart of the program. The success of the program at your unit rests squarely on your shoulders. It is your job to sample the equipment at prescribed intervals as outlined in TB 43-0106 and DA Pamphlet 738-750. Always take a reliable sample that is free from outside contamination. (NOTE: Make sure you observe all safety precautions when taking a sample.)

Complete a DD Form 2026 or ULLS DA Form 5991-E for each component sampled. Your TAMMS clerk should send your sample to the laboratory the same day it is taken. If the laboratory detects a problem, you may need to schedule samples at intervals shorter than normal to monitor its condition. If the laboratory requests a resample, follow laboratory instructions and get another sample to the servicing laboratory within 72 hours.

Your TAMMS clerk will clearly indicate your sample is special by:

1. Banding the sample bottle with red tape.

2. Marking the borders of the DD Form 2026 or ULLS DA Form 5991-E in red.

3. Writing SPECIAL in the Remarks block of the DD Form 2026 or ULLS DA Form 5991-E.

MAINTENANCE SUPERVISOR

Your job is to make sure the people you assign to sample the oil know how to sample and do it in accordance with prescribed intervals.

You check the entries made on the DD Form 2026 or ULLS DA Form 5991-E. Items especially important are hours since the last oil change, unit identification code, component and end item serial numbers, and usage.

If you have been notified some laboratory-recommended maintenance needs to be performed, make sure it is done. If the needed maintenance is performed at your level, be sure you inform the laboratory by returning the completed DA Form 3254-R within 5 days of finishing the work.

If the needed maintenance is performed above your level, be sure the DA Forms 3254-R and 2407 or ULLS DA Form 5990-E are sent along with the equipment to DS. Attach two AOAP labels to different conspicuous parts of the component.(Labels are provided by the laboratory along with the DA Form 3254-R.) If the component is placed in a container, labels should also be affixed to two opposite sides of the container for easy identification.

DIRECT SUPPORT (DS) MAINTENANCE OFFICER

DS shops get all AOAP repair actions that can't be accomplished at unit level. When repairs are made, be sure a copy of the completed DA Form 3254-R is sent back to the laboratory and the owning unit. List all discrepancies found and repairs made. If the component is not reparable at your level, ensure AOAP labels are affixed to the component and the container in which it is being shipped. Evacuate/turn-in to the next higher level of maintenance with copies of the DA Forms 3254-R and 2407 or ULLS DA Form 5990-E.

GENERAL SUPPORT (GS) MAINTENANCE OFFICER

Your task is to be sure DS has forwarded DA Forms 3254-R and 2407 or ULLS DA Form 5990-E with the equipment.

When the repairs are completed, return the component to stock or send it back to the user.

Annotate the two forms and note all discrepancies found and repairs completed.

Forward a copy of the DA Form 3254-R to the supporting laboratory and a copy to the owning unit.

AOAP LABORATORY

Personnel at your AOAP laboratory are there to help you, so get your sample to them as quickly as possible.

In the case of normal samples, the DD Form 2026 or ULLS DA Form 5991-E will be returned to the unit stamped NORMAL.

The laboratory uses this priority sequence for analyzing samples:

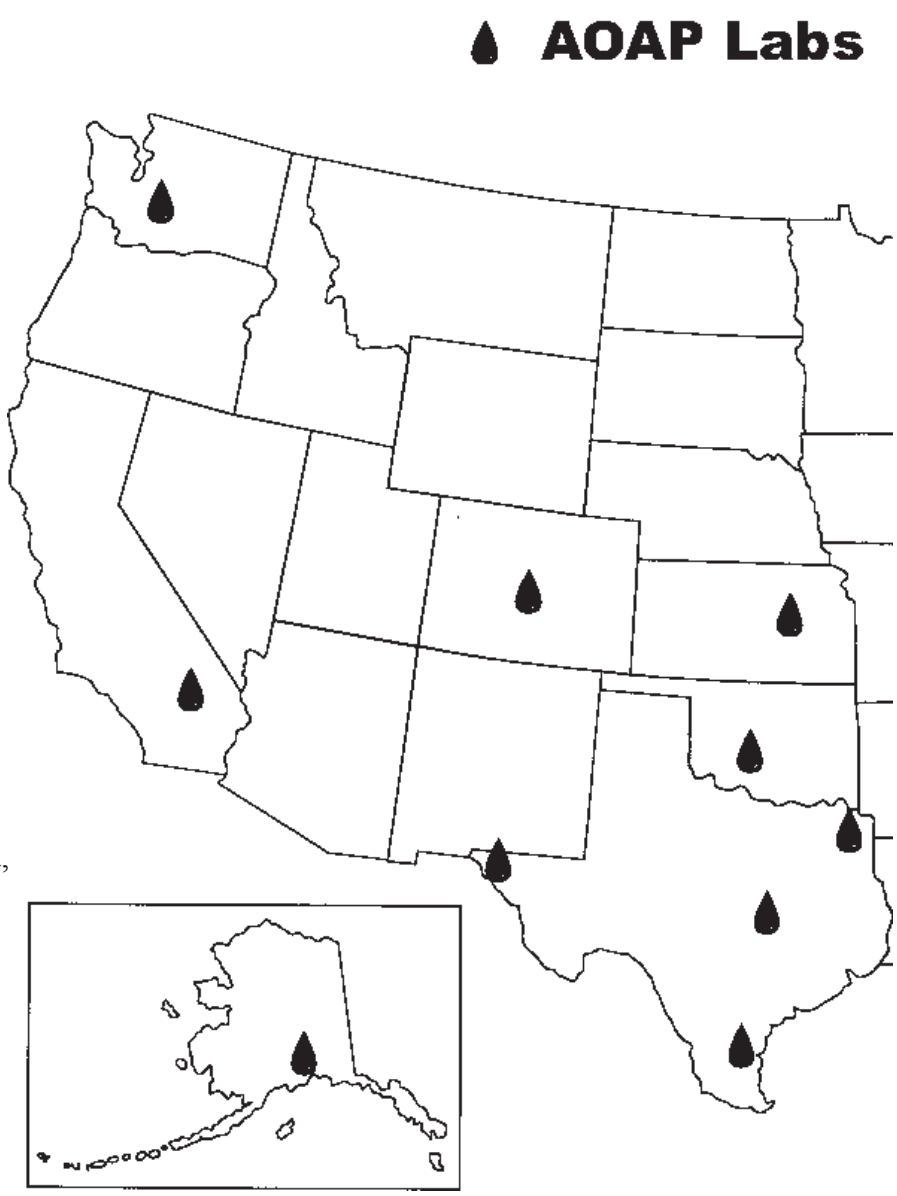
- **SPECIAL AIRCRAFT**
- **ROUTINE AIRCRAFT**
- **SPECIAL NONAERONAUTICAL**
- **ROUTINE NONAERONAUTICAL**

If sample analysis indicates a problem, the laboratory will request another sample by telephone or fax and then return the annotated DD Form 2026 or ULLS DA Form 5991-E.

When an impending failure is indicated, the laboratory will promptly notify the unit. Then they'll send a DA Form 3254-R in the mail. Units not on the same installation as the laboratory also receive a priority message as documentation. (U.S. Army, Europe (USAREUR) units receive a message in DA Form 3254-R format.) NOTE: Priority messages are not needed for

Army Reserve and National Guard nonaeronautical equipment.

Units participating in the AOAP are assigned to a specific laboratory by the LOGSA PD, AOAP, in coordination with the MACOM. Laboratory designations will be based on location and work load of available facilities. Laboratories and areas of support are at the following locations:



Fort Bliss, TX
Fort Bliss, New Mexico, Arizona, Oklahoma and Texas (west of a line between Wichita Falls and Del Rio, TX)

Fort Bragg, NC
Fort Bragg, North Carolina, and South Carolina

Fort Campbell, KY
Fort Campbell, Wisconsin, Illinois, Tennessee, and Kentucky (west of the line between Owensboro and Bowling Green)

Fort Carson, CO
Fort Carson, Colorado, Montana, Wyoming, and Utah

Fort Drum, NY
Fort Drum, New York, Vermont, New Hampshire, Maine, Rhode Island, Connecticut, and Massachusetts

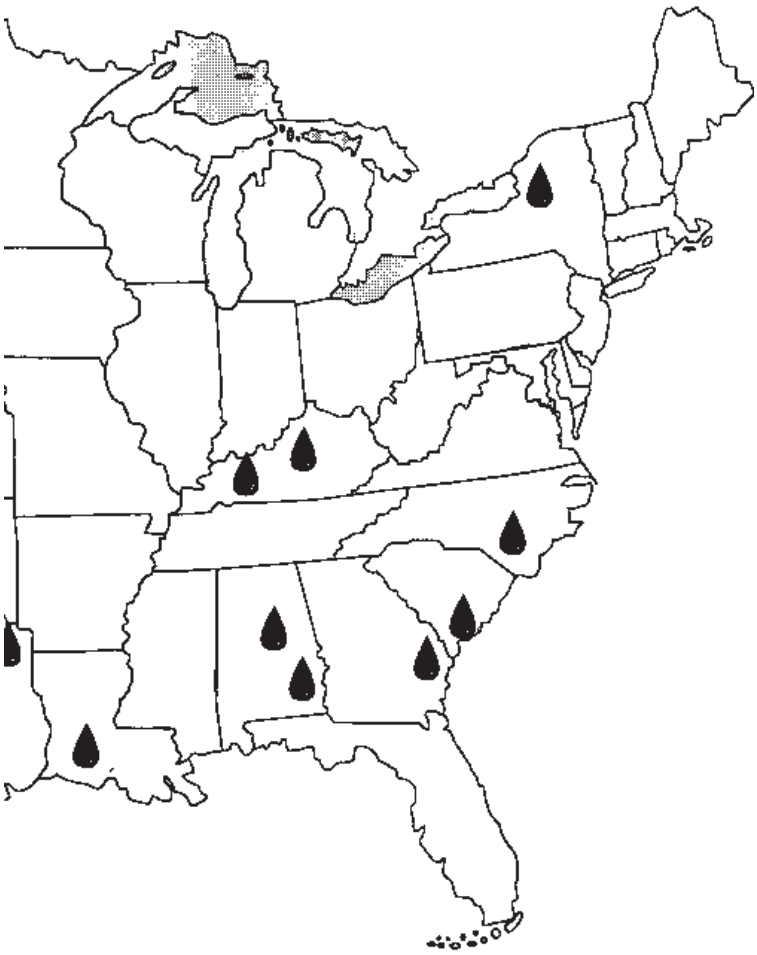
Fort Hood, TX
Fort Hood ONLY

Fort Irwin, CA
Fort Irwin ONLY

Fort Knox, KY
Fort Knox, Michigan, Indiana, Ohio,

West Virginia, Kentucky (east of a line between Owensboro and Bowling Green),
Pennsylvania, New Jersey, District of Columbia, Maryland,

Fort Lewis, WA
Fort Lewis, Washington, Oregon, Idaho,



Nevada, and California, including Twentynine Palms, CA (Marines)

Fort Polk, LA
Fort Polk, Arkansas, Louisiana, Mississippi, Texas (east of a line between Witicha Falls and Del Rio, TX)

Fort Richardson, AK
Alaska

Fort Riley, KS
Fort Riley, North Dakota, South Dakota, Nebraska, Kansas, Iowa, Missouri and Minnesota

Fort Rucker, AL
Fort Rucker, Alabama, Virginia, Delaware, and Georgia (west of I-75)

Fort Stewart, GA
Fort Stewart, Florida, and Georgia (east of I-75)

Corpus Christi Army Depot, TX
CCAD NAS (Navy), and Texas (east of the line between Wichita Falls and Del Rio, TX)

Bamberg, Germany
Nonaeronautical is eastern portion of theater)

Coleman Barracks, Germany
Aeronautical in theater. Nonaeronautical in western portion of theater

Camp Stanley, South Korea
Korea (Aeronautical and nonaeronautical), Japan (nonaeronautical)

Combat Equipment Group--Asia

Goose Creek, SC
Goose Creek and South Carolina National Guard

Commanche Base
Tuzla, Bosnia
Camp Bondsteeel, Kosovo

Mobile Lab 1
Texan National Guard, Gatesville, TX
1113th QM Team

Mobile Lab 2
SCNG, Goose Creek, SC
792d QM Team

There are three depot laboratories) that support the depot overhaul/rebuild mission. Their locations are:

Anniston Army Depot,
Anniston, AL
QA ONLY

Corpus Christi Army Depot
Corpus Christi, TX
QA ONLY

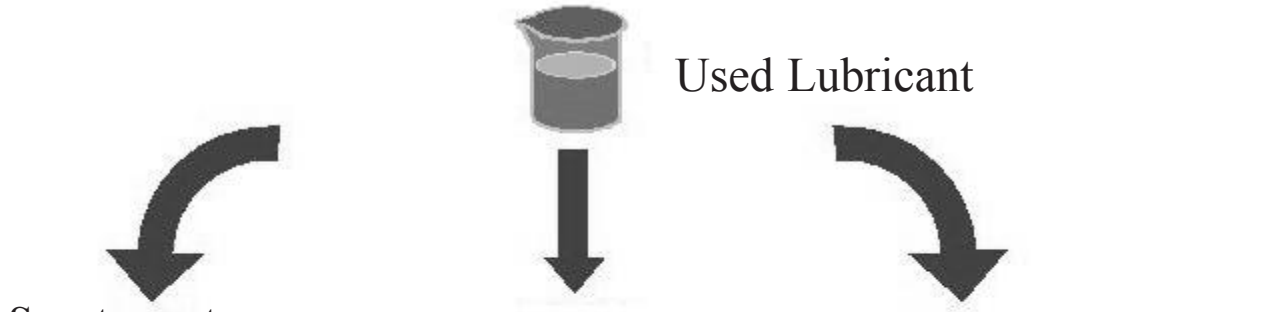
Red River Army Depot,
Texarkana, TX
QA ONLY

A Joint Oil Analysis Program (JOAP) laboratory belonging to the Navy provides oil analysis support for Army units in it's area. It is located at:

Pearl Harbor (JOAP Lab), Hawaii
Hawaii (nonaeronautical and aeronautical units)

If you have a question concerning laboratory assignment, contact the PD, AOAP, by calling the hotline at DSN 645-0869 or (256) 955-0869 or by e-mail at aoap@logsa.army.mil.

OIL ANALYSIS STANDARD INTERSERVICE SYSTEM (OASIS)



Eqipment Condition
- Wear Metals (8-10 microns)
- Contaminants
- Trends
- Systemic Problems

Oil Condition
- Water, Fuel, Coolant
- Acidity
- Additive Level
- Oxidation (corrosion)

Debris Analysis
- Large Particles (120 microns)
- Filters
- Grease/oil

Each AOAP laboratory is equipped with a computer system as part of the OASIS. The OASIS speeds up the sample processing cycle and contains an onsite data bank of laboratory information.

With AOAP history information onsite, each laboratory is currently providing commanders and maintenance personnel at all levels computer-generated reports on a monthly basis and upon request.

Most communication between the unit, the laboratory, and various maintenance echelons is with forms and computer-generated monthly reports.

Correctly completed forms provide the basic information required for the monthly reports shown on Pages 16-25 of this publication. These reports help manage equipment participation in the program more efficiently.

On the following pages are some examples of the laboratory reports.

AERONAUTICAL
COMPONENTS ENROLLED IN AOAP REPORT
REPORT PERIOD ENDING
31 Jul 01

SORT CODE : 001
UIC NO. : W22PEY ACTIVE
UNIT : USAMC LOGISTICS SUPPORT ACTIVITY
COMMANDER
SOME ADDRESS
REDSTONE ARSENAL AL 35898-0001

END ITEM MODEL	END-ITEM SERIAL NO.	A/F HRS SAMP	TAKEN	COMPONENT MODEL	COMP HSOH	COMP HSOC	COMPONENT SERIAL NO.
OH-58C	7015500		unk	Main Xmsn	1129	0	BLW04332
OH-58C			unk	90/Tail Gbx		0	AFS3180
OH-58C			unk	HYD SYS	3983	0	7015500
OH-58C			unk	T63-A-720	889	0	AE405570
OH-58C	7015639		unk	90/Tail Gbx	1316	0	A1333
OH-58C			unk	T63-A-720	825	162	AE405543
AH-1F	7015996		unk	42/Int Gbx	518		AHP30327
AH-1F			unk	90/Tail Gbx	719		AFS911
AH-1F			unk	HYD SYS 1	3255		7015996
AH-1F			unk	HYD SYS 2	3255		
AH-1F			unk	HYD SYS 3	3255		
OH-58C	7120356		unk	Main Xmsn	1436	150	BLW489
OH-58C			unk	90/Tail Gbx	1509	1	A704
OH-58C			unk	HYD SYS	3540	150	7120356
OH-58C	7120675		unk	Main Xmsn	2379	76	BLW4166
OH-58C			unk	90/Tail Gbx	1507	76	A1131
OH-58C			unk	HYD SYS	3823	76	7120675
OH-58C			unk	T63-A-720	820	88	AE405713
OH-58C	7120839		unk	T63-A-720	592	120	AE405531
OH-58C	7120841		unk	Main Xmsn	1707	92	BLW1382
OH-58C			unk	90/Tail Gbx	252	92	AFS3223
OH-58C			unk	HYD SYS	3785	274	7120841
OH-58C			unk	T63-A-720	857	74	AE405617
AH-1F	7121033		unk	42/Int Gbx			AHP52166
AH-1F			unk	90/Tail Gbx			A43
AH-1F			unk	HYD SYS 1	2789		7121033
AH-1F			unk	HYD SYS 2	2789		
AH-1F			unk	HYD SYS 3	2789		
AH-1F	7121044		unk	42/Int Gbx	862	0	AHP52846

This report is sorted by UIC and is sent to the unit each month. The report lists the components enrolled as well as the end-item model in which the component is installed. The sampling interval and the date sampled will be shown for each component enrolled. If the equipment is TDY, the word TDY will appear in the REMARKS column.

SORT CODE : 001
UIC NO. : W22PEY ACTIVE
UNIT : USAMC LOGISTICS SUPPORT ACTIVITY
COMMANDER
SOME ADDRESS
REDSTONE ARSENAL AL 35898-0001

BUMPER NUMBER	END ITEM MODEL	END-ITEM SERIAL NO.	E/I METER READING	C M
HQ10	M1038	018221	M	6.
HQ10	M1038		M	TI
HQ25	M998	034606	M	6.
HQ25	M998		M	TI
HQ3	M998	037959	M	6.
HQ3	M998		M	TI
HQ2	M998	039828	M	6.
HQ2	M998		M	TI
HQ5	M998	039882	M	6.
HQ5	M998		M	TI
HQ12	M1038	042917	M	6.
HQ12	M1038		M	TI
HQ13	M1038	042947	M	6.
HQ13	M1038		M	TI

FOR BAMBERG
REPORT DATE : 31 AUGUST 2001
BY DATE SAMPLE TAKEN

SAMP NUM	DATE SAMPLE TAKEN	HOURS NEXT DUE	FEEDBACK/ REMARKS/ RESULTS
00027	28FEB96	Unk	TDY
00029	28FEB96	Unk	TDY
00030	28FEB96	Unk	TDY
00028	28FEB96	Unk	TDY
00489	16JAN96	Unk	TDY
00807	22JAN96	Unk	TDY
00031	29FEB96	Unk	TDY
00032	29FEB96	Unk	TDY
00033	29FEB96	Unk	TDY
00034	29FEB96	Unk	TDY
00035	29FEB96	Unk	TDY
00505	16JAN96	Unk	TDY
00814	22JAN96	Unk	TDY
00507	16JAN96	Unk	TDY
00427	06FEB96	Unk	TDY
00428	06FEB96	Unk	TDY
00429	06FEB96	Unk	TDY
01019	23FEB96	Unk	TDY
00163	29JAN96	Unk	TDY
00491	03JAN96	Unk	TDY
00492	03JAN96	Unk	TDY
00493	03JAN96	Unk	TDY
00490	03JAN96	Unk	TDY
00450	08MAR96	Unk	TDY
00451	08MAR96	Unk	TDY
00452	08MAR96	Unk	TDY
00453	08MAR96	Unk	TDY
00454	08MAR96	Unk	TDY
00512	13FEB96	Unk	TDY

This report is provided to the unit monthly and reflects the results for each conponent enrolled by UIC. It contains information about the last sample and the status of feedback samples which the lab requested.

NON-AERONAUTICAL
COMPONENTS ENROLLED IN AOAP REPORT
REPORT PERIOD ENDING
31 Jul 01

FOR BAMBERG
REPORT DATE : 31 AUGUST 2001
BY DATE SAMPLE TAKEN

	COMPONENT MODEL		COMPONENT SERIAL NO.	COMP HSOH	COMP HSOC	SAMP NUM	DATE SAMPLE TAKEN	DATE NEXT DUE	DYS DLQ	FEEDBACK/ REMARKS/ RESULTS
A	6.2 L DIESEL	-ENG	018221E	30590	0	01474	14APR00	- 11OCT00		TDY
A	THM-400	-XMSN	018221T	29623	7621	01558	16NOV99	- 15NOV00		TDY
A	6.2 L DIESEL	-ENG	034606E	20401	7621	00384	28FEB00	- 26AUG00		TDY
A	THM-400	-XMSN	034606T	19434	6654	01544	16NOV99	- 15NOV00		TDY
A	6.2 L DIESEL	-ENG	037959E	33127	6317	00383	28FEB00	- 26AUG00		TDY
A	THM-400	-XMSN	037959T	32040	5230	01548	16NOV99	- 15NOV00		TDY
A	6.2 L DIESEL	-ENG	039828E	28256	5052	00391	28FEB00	- 26AUG00		TDY
A	THM-400	-XMSN	039828T	28163	6675	01550	16NOV99	- 15NOV00		TDY
A	6.2 L DIESEL	-ENG	039882E	38794	8939	00390	28FEB00	- 26AUG00		TDY
A	THM-400	-XMSN	039882T	39145	8390	01549	16NOV99	- 15NOV00		TDY
A	6.2 L DIESEL	-ENG	042917E	27408	1408	00393	28FEB00	- 26AUG00		TDY
A	THM-400	-XMSN	042917T	26806	7846	01556	16NOV99	- 15NOV00		TDY
A	6.2 L DIESEL	-ENG	042947E	26332	0	01475	14APR00	- 11OCT00		TDY
A	THM-400	-XMSN	042947T	25852	8190	01557	16NOV99	- 15NOV00		TDY

SORT CODE : 001

AERONAUTICAL
RESAMPLE AND TYPE RECOMMENI
BY BAMBERG

UIC NO. : W22PEY

UNIT NAME : USAMC LOGISTICS SUPPORT ACTIVITY
SOME ADDRESS
REDSTONE ARSENAL AL 35898-0001

END-ITEM MODEL	END-ITEM SERIAL NO.	COMPONENT MODEL	COMPONENT SERIAL NO.	DATE SAMPLED	A
AH-6J	9525371	MAIN XMSN	0066	12/09/99	1:

Total resample recommendations from 07/01/01 to 07/31/01 = 0

Total resamples not complied with from prior reporting periods = 1

Total Resamples Not Complied With = 1

Total number of days for resamples not complied with:

10 days or less	11-20 days	21-30 days	31-40 days	40-50 days	50-60 days
0	0	0	0	0	0

AL
ENDATION REPORT
3

REPORT DATE: 31 AUGUST 2001
BY DATE SAMPLE TAKEN

)	DATE ANALYZED	CODE NARRATIVE	PREV REQ	REMARI
	12/09/99	DO NOT OPERATE ! Submit Sample of New Oil in Unit Fuel Dilution		TDY

over 60 days

1

This report contains history records with a spectrometric lab advice other than NORMAL (A) for the most current sample. All components that were resampled for the unit during the month will be listed with the lab recommendation and a narrative description for each sample.

NONAERONAUTICAL
OIL ANALYSIS MONTHLY ACTIVITY REPORT
FOR SAMPLES ANALYZED DURING
AUGUST 2001

SORT CODE : 067
UIC NO. : WACKBO
UNIT NAME : B 426 S & T BN
ATTN: AOAP POC
FT ANYWHERE, KY 35898-7466

COMPONENT MODEL	COMPONENT SERIAL #	END ITEM SERIAL #	SAMPLE NUMBER	DATE ANAL	DAYS TRANS
LD-465-1	3930678	10717	1395	08/14/01	3
IHC DT-466b	146027	1307	1401	08/14/01	3
IHC S-700	37922	1307	1400	08/14/01	3
LD-465-1	3932350	22511279	311	08/04/01	2
LD-465-1	3929008	28715	1404	08/14/01	3
CASE 207D	4300192	9140186	1374	08/14/01	UNK
CLK18340	020399	9140186	1372	08/14/01	1
CASE 207D	4314067	9140187	1403	08/14/01	10
DD-453N	5650123	E1268	1402	08/14/01	3
DD-453N	4D0205855	E1373	1397	08/14/01	3
ALS 3331-1	677967	E1373	1399	08/14/01	3
HYD SYS	E1373	E1373	1365	08/14/01	3
DD-453N	4D47237	E1381	1396	08/14/01	1
DD-453N	4D180833	E1386	1398	08/14/01	4
ALS 3331-1	67345	E1389	312	08/14/01	0

SUMMARY FOR UIC : WACKBO

TOTAL SAMPLES ANALYZED	AVERAGE DAYS IN TRANSIT	TOTAL UNKNOWN OVERALL	T
15	3	2	

REPORT DATE : 31 AUGUST 2001
COMMAND : FORSCOM

HRS OVH	HRS SINCE OIL CHANGE	REASON FOR SAMPLE	LAB ADVICE
000596	0596	ROUTINE	NORMAL
000849	0849	ROUTINE	NORMAL
UNKNOWN	UNKNOWN	ROUTINE	NORMAL
UNKNOWN	UNKNOWN	LAB REQUEST	NORMAL
012153	1215	ROUTINE	NORMAL
001367	1367	ROUTINE	NORMAL
001367	1367	ROUTINE	NORMAL
001142	1142	ROUTINE	NORMAL
000484	0484	ROUTINE	NORMAL
000723	0723	ROUTINE	NORMAL
000723	0723	ROUTINE	NORMAL
000723	0723	ROUTINE	NORMAL
001733	1733	ROUTINE	RESAMPLE
000168	0168	ROUTINE	NORMAL
001402	UNKNOWN	LAB REQUEST	RESAMPLE

TOTAL UNKNOWN OIL CHANGE

3

This report contains the header data for a history record and the sample data for its most current sample. The report displays the activity of components during a 1 month period and is selectable by month/year. It is available upon request.

CONFIGURATION REPORT BY : END ITEM

FT ANYWHERE, AL 31 AUGUST 2001

NON-AERONAUTICAL

END-ITEM MODEL	END-ITEM S/N	CUSTOMER UIC	COMPONENT MODEL	COMPONENT S/N
AH-1F	6715825	WCATAO	42/INT GBX	AHP13027
AH-1F	6715825	WCATAO	90/TAIL GBX	AFS91327
AH-1F	6715825	WCATAO	HYD SYS 1	6715825
AH-1F	6715825	WCATAO	HYD SYS 2	6715825
AH-1F	6715825	WCATAO	HYD SYS 3	6715825
AH-1F	6715825	WCATAO	MAIN XMSN	ANB19210
AH-1F	6715825	WCATAO	T53-L-703	LE12450Z
AH-1F	6715831	WCATAO	42/INT GBX	AHP52661
AH-1F	6715831	WCATAO	90/TAIL GBX	AFS925
AH-1F	6715831	WCATAO	HYD SYS 1	6715831
AH-1F	6715831	WCATAO	HYD SYS 2	6715831
AH-1F	6715831	WCATAO	HYD SYS 3	6715831
AH-1F	6715831	WCATAO	MAIN XMSN	A649
AH-1F	6715831	WCATAO	T53-L-703	LE17392Z

This report is available on request. It contains the end-item model and serial number, the UIC, component model and serial number, and the dates of the last five samples. The report is arranged by end-item model/serial number and can be used to determine if a UIC has enrolled all the components for a particular end-item.

DATES LAST FIVE (5) SAMPLES TAKEN

04/26/01	05/02/01	05/04/01	07/11/01	08/11/01
02/13/01	03/15/01	04/26/01	07/11/01	08/11/01
02/13/01	03/15/01	04/26/01	07/11/01	08/11/01
02/13/01	03/15/01	04/26/01	07/11/01	08/11/01
02/13/01	03/15/01	04/26/01	07/11/01	08/11/01
02/13/01	03/15/01	04/26/01	07/11/01	08/11/01
04/26/01	05/02/01	07/11/01	08/08/01	08/11/01
07/05/01	07/26/01	07/31/01	08/07/01	08/11/01
06/13/01	06/27/01	07/05/01	07/26/01	08/11/01
01/18/01	05/17/01	07/05/01	07/26/01	08/11/01
01/18/01	05/17/01	07/05/01	07/26/01	08/11/01
01/18/01	05/17/01	07/05/01	07/26/01	08/11/01
03/08/01	05/17/01	07/05/01	07/26/01	08/11/01
07/05/01	07/22/01	07/26/01	08/08/01	08/11/01

NONAERONAUTICAL

SORT CODE : 067 USAGE & SAMPLE STATUS R
UIC CODE : WABOTO ACTIVE REPORT PERIOD EN
UNIT : 1ST BN 5TH SPECIAL FORCES 31 MARCH 2002
FT ANYWHERE,AL 35898-7466

BUMPER NUMBER	END ITEM MODEL	END-ITEM SERIAL NO.	E/I METER READING	COMPONENT MODEL		C SI
1D50	M35A2	012523540	81021	LDT-465-1D		39
1D48	M35A2	012528596	6172	LDT-465-1D		39
1D23	M35A2	012530980	4286	LDT-465-1D		18
1B3	M35A2	012532392	5901	LDT-465-1D		38
1C3	M35A2	012533151	12754	LD-465-1C	-ENG	39
1A3	M35A2	022512765	27165	LDT-465-1C		39
1B2	M35A2	022515329	24608	LDT-465-1C		38
1D44	M35A2	022520253	1	LDT-465-1C		38
1A2	M35A2	022522251	55630	LDT-465-1C		39
1D27	M35A2	052525362	11459	LDT-465-1C		39
1C2	M35A2	052525533	313356	LD-465-1C	-ENG	38
1D22	M35A2	053914027	12085	LD-465-1C	-ENG	38
1D25	M35A2C	054010373	62486	LD-465-1	-ENG	38
1D52	M35A2c	054010675	23731	LDT-465-1C		39
1D24	M35A2	054012745	229	LDT-465-1C		39
1D49	M35A2C	054013570	38579	LDT-465-1C		39
1D45	M35A2	054065909	38579	LDT-465-1C		48
1D70	M10A	1004	310	HYD SYS	-HYD	10
1D70	M10A	1004	325	IHC S-700	-XMSN	11
1D70	M10A	1004	310	IHC DT-466B	-ENG	79

TOTAL END ITEMS ENROLLED = 24

TOTAL COMPONENTS ENROLLED = 31

TOTAL END ITEMS WITH NO USAGE REPORTED = 0

TUS REPORT FOR FT ANYWHERE, ALABAMA
OD ENDING REPORT DATE : 18 APRIL 2002
02 BY DATE SAMPLE TAKEN

COMPONENT SERIAL NO.	SAMP NUM	DATE SAMPLE TAKEN	DATE NEXT DUE	DAYS DELINQ	FEEDBACK SAMP NO.	REQD DATE	REMARKS
3988131	934	06MAR02-04JUN02					
3993317	929	06MAR02-04JUN02					
18009	933	06MAR02-04JUN02					
3887827	935	06MAR02-04JUN02					
392449	932	06MAR02-04JUN02					
3900220	174	08AUG01-06NOV01					
3802058	648	05NOV01-03FEB02					
3807737	2644	22SEP01-21DEC01					
3900592	649	05NOV01-03FEB02					
3936051	647	05NOV01-03FEB02					
3889076	646	05NOV01-03FEB02					
3870176	434	05NOV01-03FEB02					
3831769	431	05NOV01-03FEB02					
3901222	2643	22SEP01-21DEC01					
3900520	1299	07MAR02-05JUN03					
3900417	936	06OCT01-04JAN02					
4886547	2640	22SEP01-21DEC01					
1004	1213	07OCT01-07OCT02					
1124678	430	03NOV01-01FEB02					
79941	2818	22SEP01-21DEC01					

TOTAL RECOMMENDATIONS WITH FEEDBACK = 0

TOTAL COMPONENTS DELINQUENT = 0

PERCENTAGE OF END ITEMS WITH NO USAGE REPORTED = 0.00

For nonaeronautical equipment only. Provides end item usage and sampling status for each component. Provides the number of days delinquent, if applicable.

AOAP FORMS

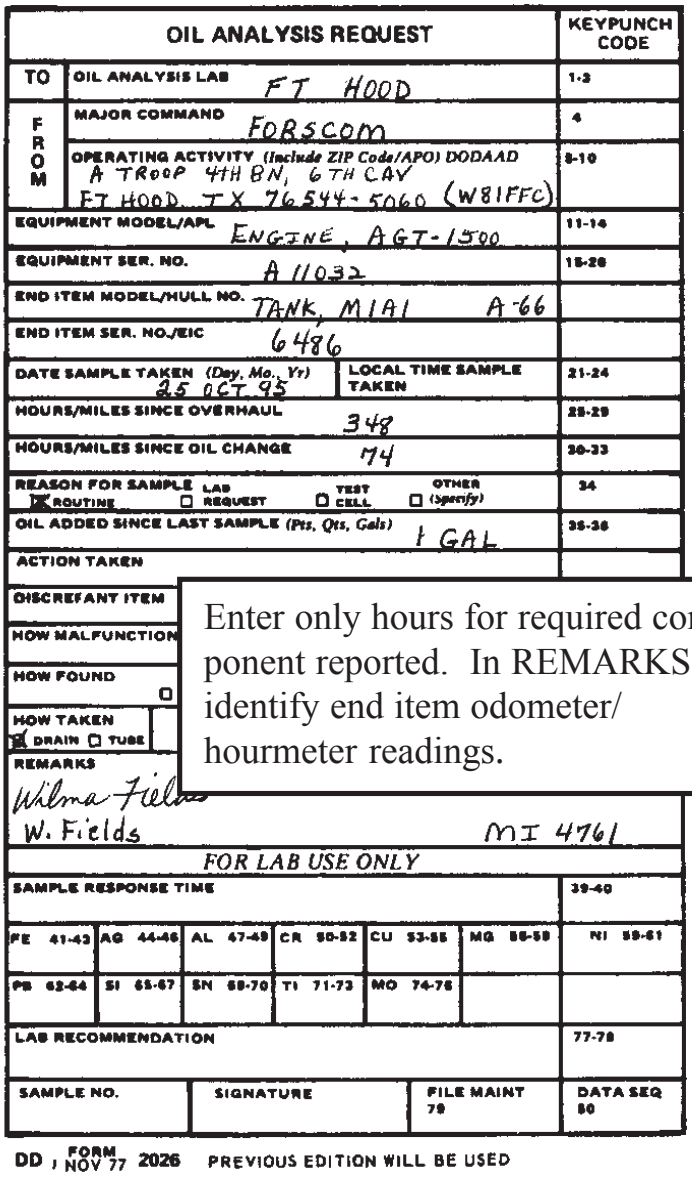
Now, we'll discuss each AOAP-related form.

DD FORM 2026 OR ULLS DA FORM 5991-E, Oil Analysis Request.

Once the sample has been taken and the bottle sealed, the DD Form 2026 must be properly completed. **THIS IS IMPORTANT.** Otherwise, processing will be delayed.

It is the unit TAMMS clerk's job to ensure entries on the DD Form 2026 or ULLS DA Form 5991-E are correct. The maintenance supervisor will check the form, adding any special data needed to be forwarded to the laboratory in the Remarks Block. For example, include the details of any oil-wetted special maintenance since the last oil sample. Too much information is better than too little. If your sample is normal and no potential trouble is found, the laboratory informs you by returning the DD Form 2026 or ULLS DA Form 5991-E stamped NORMAL. If there is something wrong with your oil sample, the laboratory will request another sample by telephone, followed by the form stamped ABNORMAL.

When an oil change is needed, your unit will be notified by telephone, followed by the DD Form 2026 or ULLS DA Form 5991-E indicating an oil change recommendation. The filter is always serviced or changed when the oil



OIL ANALYSIS REQUEST — KEYPUNCH CODE

TO: OIL ANALYSIS LAB: FT HOOD (1-3)

FROM: MAJOR COMMAND: FORSCOM (4)

OPERATING ACTIVITY (Include ZIP Code/APO) DODAAD (5-10):
A TROOP 4TH BN, 6TH CAV
FT HOOD, TX 76544-5060 (W81FFC)

EQUIPMENT MODEL/APL: ENGINE, AGT-1500 (11-14)

EQUIPMENT SER. NO.: A 11032 (15-20)

END ITEM MODEL/HULL NO.: TANK, M1A1 A-66

END ITEM SER. NO./EIC: 6486

DATE SAMPLE TAKEN (Day, Mo., Yr): 25 OCT 95 (21-24)

LOCAL TIME SAMPLE TAKEN

HOURS/MILES SINCE OVERHAUL: 348 (25-29)

HOURS/MILES SINCE OIL CHANGE: 74 (30-33)

REASON FOR SAMPLE (34): [X] ROUTINE [ ] LAB REQUEST [ ] TEST CELL [ ] OTHER (Specify)

OIL ADDED SINCE LAST SAMPLE (Pts, Qts, Gals): 1 GAL (35-38)

ACTION TAKEN

DISCREPANT ITEM

HOW MALFUNCTION

HOW FOUND

HOW TAKEN: [X] DRAIN [ ] TUBE

REMARKS: Wilma Fields
W. Fields MI 4761

FOR LAB USE ONLY

SAMPLE RESPONSE TIME (39-40)

FE 41-43	AG 44-46	AL 47-49	CR 50-52	CU 53-55	MG 56-58	NI 59-61
PB 62-64	SI 65-67	SN 68-70	TI 71-73	MO 74-76		

LAB RECOMMENDATION (77-78)

SAMPLE NO. | SIGNATURE | FILE MAINT 79 | DATA SEQ 80

DD FORM 2026 NOV 77 PREVIOUS EDITION WILL BE USED

Enter only hours for required component reported. In REMARKS, identify end item odometer/ hourmeter readings.

is changed. Processed forms will be forwarded to your unit at the end of each workweek. File your most recently processed Oil Analysis Request. It contains your most recent sample information. Use this information as a baseline when preparing a DD Form 2026 or ULLS DA Form 5991-E for your next sample.

When a maintenance action is called for, your unit will be notified immediately. A DA Form 3254-R will follow in the mail. (If you are in USAREUR, you will receive a message, in DA 3254-R format.) For units not on the same post as the laboratory, a priority message will also be sent as documentation. NOTE: Priority messages are not required for Army Reserve and National Guard nonaeronautical equipment.

DATE: 19-JUL-95 OIL ANALYSIS REQUEST DA FORM 5991-E

ORGANIZATION:
COMMANDER
B BTRY 2/44 ADA RGT
AFZD KH H BLDG 6514
FT. CAMPBELL, KY. 42223-5080

UIC: WH10B0 MAJOR COMMAND: FORSCOM

BUMPER NO: B64

COMPONENT SER NO: 18BP

COMPONENT MODEL: HYD-SYSTM
COMPONENT NOUN: HYDRAULICS

REASON FOR SAMPLE: ROUTINE
DATE SAMPLE TAKEN: 19-JUL-95

HRS/MILES SINCE NEW/OVHL: M31695

HRS/MILES SINCE OIL CHANGE: M31695

OIL ADDED SINCE LAST SAMPLE: 000

TYPE OIL: OE/HDO10

END-ITEM SER NO: C536-00304

END-ITEM MODEL: M936WW

EIC: BTF

ODOMETER/HOURMETER: M31627

LABORATORY USE ONLY

RECENT COMPONENT MAINT/REMARKS

M 31627

Enter only hours for required component reported. In REMARKS, identify end item odometer/ hourmeter reading.

AOAP RELATED:

ODR=
EIR=

WORKORDER NO=

SAMPLE NO:

SAMPLE INDEX NO: 1990

UNIT POC: SSG BARBOSA GENARO

UNIT PHONE NO: (502)798-3294

ASSIGNED LAB: FT. CAMPBELL

RECOMMENDATION NO:

EVALUATOR: DATE:

DA FORM 3254-R, Oil Analysis Recommendation and Feedback.

The laboratory uses DA Form 3254-R to report its findings and suggest what work may be necessary based on an analysis of the sample.

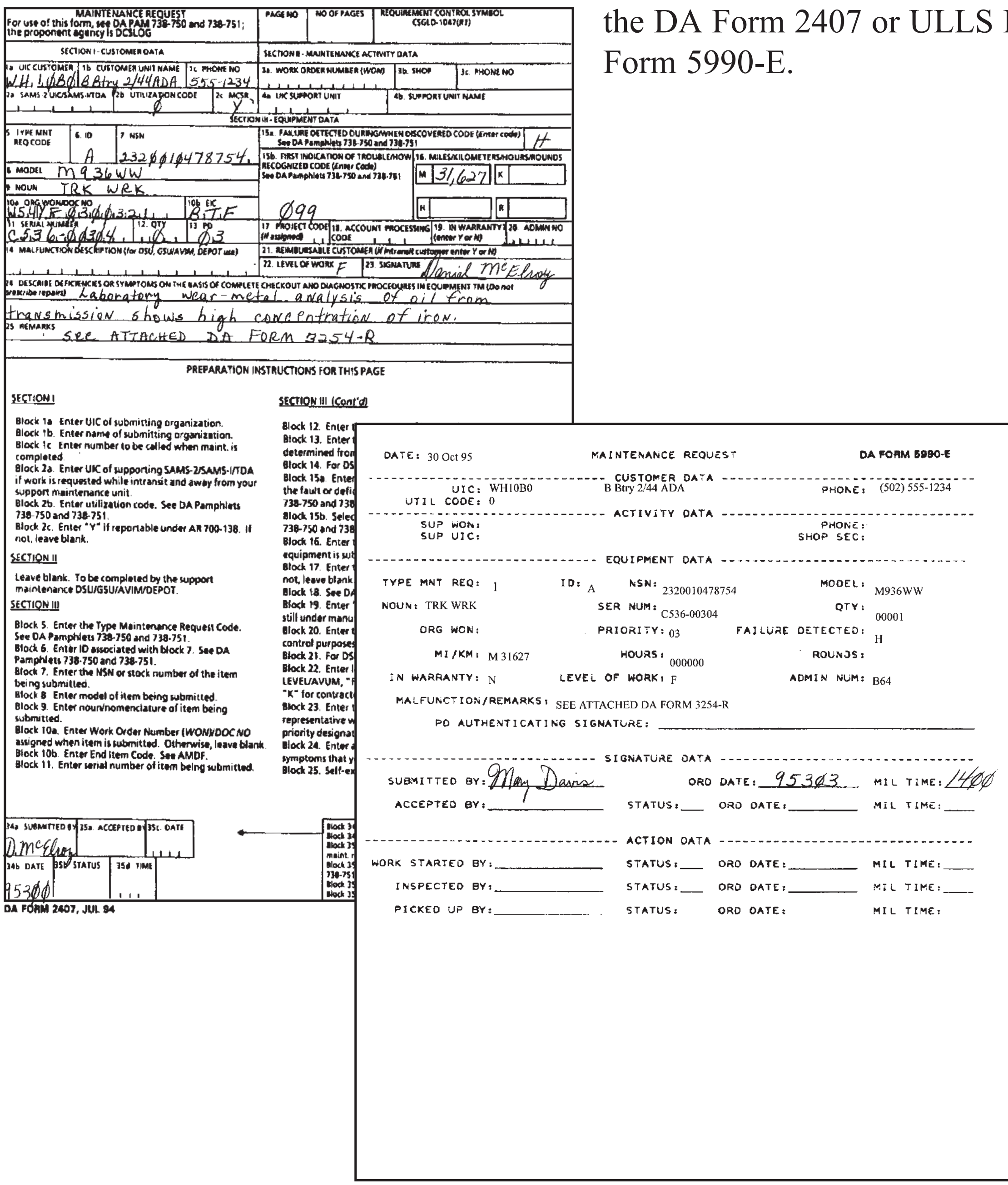
Once corrective maintenance is completed, it is vital that the maintenance repair activity enter a narrative of maintenance action taken and the control number of the DA Form 2407 or ULLS DA Form 5990-E in Block 14 (Feedback) of DA Form 3254-R. When properly filled out, this form is returned to the laboratory within 5 days after the work is completed.

This feedback (record of defects found and actions taken) is stored in the AOAP data base at LOGSA for use by the MACOMs, major subordinate commands, the AOAP laboratories, and the PD, AOAP. Typical uses of these data are to support:

- Life-cycle Management
- Failure Trends
- Oil Consumption
- Usage
- Consumables
- Equipment Ownership

DA FORM 2407 OR ULLS DA FORM 5990-E, Maintenance Request

When a DA Form 2407 or ULLS DA Form 5990-E, Maintenance Request, is prepared by the unit to request support from a higher level of maintenance for an AOAP recommendated evaluation, attach the DA Form 3254-R, Oil Analysis Recommendation and Feedback, to the request. Enter "See attached DA Form 3254-R" in the Remarks Block of the DA Form 2407 or ULLS DA Form 5990-E.



MAINTENANCE REQUEST
For use of this form, see DA PAM 738-750 and 738-751; the proponent agency is DCSLOG

SECTION I - CUSTOMER DATA

1a UIC CUSTOMER: WH1WB0 | 1b CUSTOMER UNIT NAME: B Btry 2/44ADA | 1c PHONE NO: 555-1234
2b UTILIZATION CODE: 0 | 2c MCSR: Y

SECTION III - EQUIPMENT DATA

5 TYPE MNT REQ CODE | 6 ID: A | 7 NSN: 2320010478754
8 MODEL: M936WW
9 NOUN: TRK WRK
10a ORG WON/DOC NO: WS4YF 030321 | 10b EIC: BTF
11 SERIAL NUMBER: C536-00304 | 12 QTY: 0 | 13 PD: 03
15a FAILURE DETECTED DURING/WHEN DISCOVERED CODE: H
16 MILES/KILOMETERS/HOURS/ROUNDS: M 31,627
15b FIRST INDICATION OF TROUBLE/HOW RECOGNIZED CODE: 099
22 LEVEL OF WORK: F | 23 SIGNATURE: Daniel McElroy

24 DESCRIBE DEFICIENCIES OR SYMPTOMS ON THE BASIS OF COMPLETE CHECKOUT AND DIAGNOSTIC PROCEDURES IN EQUIPMENT TM: Laboratory wear-metal analysis of oil from transmission shows high concentration of iron.
25 REMARKS: See ATTACHED DA FORM 3254-R

PREPARATION INSTRUCTIONS FOR THIS PAGE

SECTION I
Block 1a. Enter UIC of submitting organization.
Block 1b. Enter name of submitting organization.
Block 1c. Enter number to be called when maint. is completed.
Block 2a. Enter UIC of supporting SAMS-2/SAMS-I/TDA if work is requested while intransit and away from your support maintenance unit.
Block 2b. Enter utilization code. See DA Pamphlets 738-750 and 738-751.
Block 2c. Enter "Y" if reportable under AR 700-138. If not, leave blank.

SECTION II
Leave blank. To be completed by the support maintenance DSU/GSU/AVIM/DEPOT.

SECTION III
Block 5. Enter the Type Maintenance Request Code. See DA Pamphlets 738-750 and 738-751.
Block 6. Enter ID associated with block 7. See DA Pamphlets 738-750 and 738-751.
Block 7. Enter the NSN or stock number of the item being submitted.
Block 8. Enter model of item being submitted.
Block 9. Enter noun/nomenclature of item being submitted.
Block 10a. Enter Work Order Number (WON)/DOC NO assigned when item is submitted. Otherwise, leave blank.
Block 10b. Enter End Item Code. See AMDF.
Block 11. Enter serial number of item being submitted.

24a SUBMITTED BY: D. McElroy | 24b DATE: 95300

DA FORM 2407, JUL 94

DATE: 30 Oct 95 | MAINTENANCE REQUEST | DA FORM 5990-E

CUSTOMER DATA
UIC: WH10B0 | B Btry 2/44 ADA | PHONE: (502) 555-1234
UTIL CODE: 0

ACTIVITY DATA
SUP WON: | PHONE:
SUP UIC: | SHOP SEC:

EQUIPMENT DATA
TYPE MNT REQ: 1 | ID: A | NSN: 2320010478754 | MODEL: M936WW
NOUN: TRK WRK | SER NUM: C536-00304 | QTY: 00001
ORG WON: | PRIORITY: 03 | FAILURE DETECTED: H
MI/KM: M 31627 | HOURS: 000000 | ROUNDS:
IN WARRANTY: N | LEVEL OF WORK: F | ADMIN NUM: B64
MALFUNCTION/REMARKS: SEE ATTACHED DA FORM 3254-R
PD AUTHENTICATING SIGNATURE:

SIGNATURE DATA
SUBMITTED BY: Mary Davis | ORD DATE: 95303 | MIL TIME: 1400
ACCEPTED BY: | STATUS: | ORD DATE: | MIL TIME:

ACTION DATA
WORK STARTED BY: | STATUS: | ORD DATE: | MIL TIME:
INSPECTED BY: | STATUS: | ORD DATE: | MIL TIME:
PICKED UP BY: | STATUS: | ORD DATE: | MIL TIME:

III PROCEDURES

To get the most out of your participation in the AOAP, you need to know what publications apply, what supplies are needed, how and when to take a sample, and what paperwork is involved.

PUBLICATIONS

In addition to this guide, keep these publications on hand:

AR 750-1, Maintenance of Supplies and Equipment, Army Materiel Maintenance Policy and Retail Maintenance Operations.

DA Pamphlet 738-750, Functional Users Manual for the Army Maintenance Management System (TAMMS).

DA Pamphlet 738-751, Functional Users Manual for the Army Maintenance Management System-Aviation (TAMMS-A).

TB 43-0106, Aeronautical Equipment, Army Oil Analysis Program (AOAP).

VIDEOTAPES

To assist in your AOAP mission, PD, AOAP, has produced four videotapes covering everything from sampling to laboratory operations. Available through your installation Training and Audiovisual Support Center, they are:

Nonaeronautical AOAP Sampling Procedures (TVT 9-28/SAVPIN 701265DA).

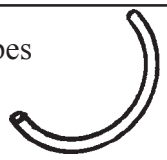
A Tour of the AOAP Laboratory (TVT 9-29/SAVPIN 701367DA).

The AOAP Team (TVT 9-30/SAVPIN 701368DA).

Aeronautical AOAP Sampling Procedures (TVT 46-125/SAVPIN 701366DA).

SUPPLIES

To ensure compliance with AOAP requirements, keep an adequate stock of sampling supplies on hand. This chart gives basic information about supplies needed to sample aeronautical and nonaeronautical equipment. If your equipment has a sampling valve, you do not need the oil sampling pump or tubing. It's recommended that a 90-day supply of expendables be stocked.

Non-Aero NSN	Item	Aero NSN
8125-01-082-9697 (NOTE 1)	Sampling Bottle 	8125-00-933-4414
4930-01-119-4030	Pump, Oil Sampling	N/A
N/A	3/8-in Plastic Tubes 15-in long 30-in long 	4710-00-933-4415 4710-01-087-1629
4720-00-964-1433 	Nonmetallic tubing 1/4 in outside diameter	N/A
8105-00-290-0340	Shipping Sack 	8105-00-290-0340
8105-00-837-7754 	Plastic Bag	8105-00-837-7754 8105-00-837-7753
8125-01-193-3440	Mailer Kit (NOTE 2)	N/A

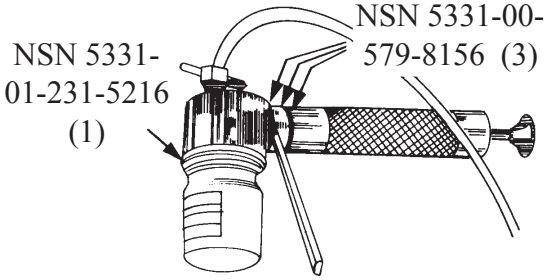
NOTES:

(1) The three ounce nonaeronautical plastic sampling bottle will be used for submitting grease samples.

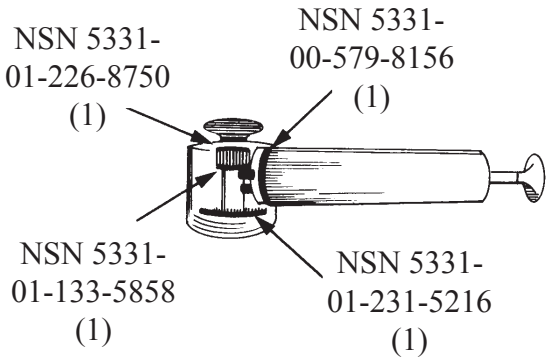
(2) The mailer kit, NSN 8125-01-193-3440, is leakproof and contains 24 nonaeronautical sampling bottles, plastic shipping sacks, and mailing cartons. It is used when shipping samples through the U.S. Postal Service.

Replacement O-Rings for the Oil Sampling Pump are:

Pump (with stand)



Pump (no stand)



SAMPLING

The key to an effective AOAP is good sampling. That means getting the oil out in a way that ensures it is representative of the rest of the oil in the system. Avoid contaminating the fluid sample by using clean sampling equipment and proper techniques. Often the reason for an abnormal sample is due to improper sampling techniques which can cause contamination.

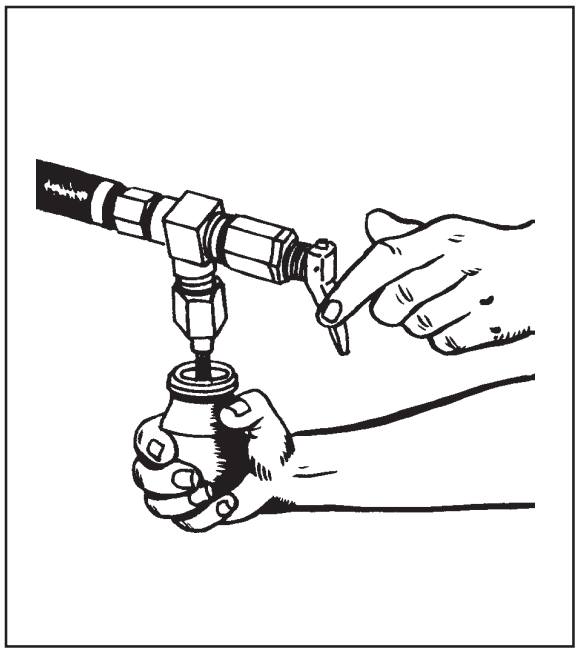
You can take a sample without warming nonaeronautical equipment to operating temperature if it has been operated within the last 30 days. Otherwise, you must warm up the equipment before you sample. This applies to both routine and special samples. However, if the laboratory requests you warm up your equipment before you sample, comply with their request.

TAKING A NONAERONAUTICAL OIL SAMPLE

* VALVE METHOD

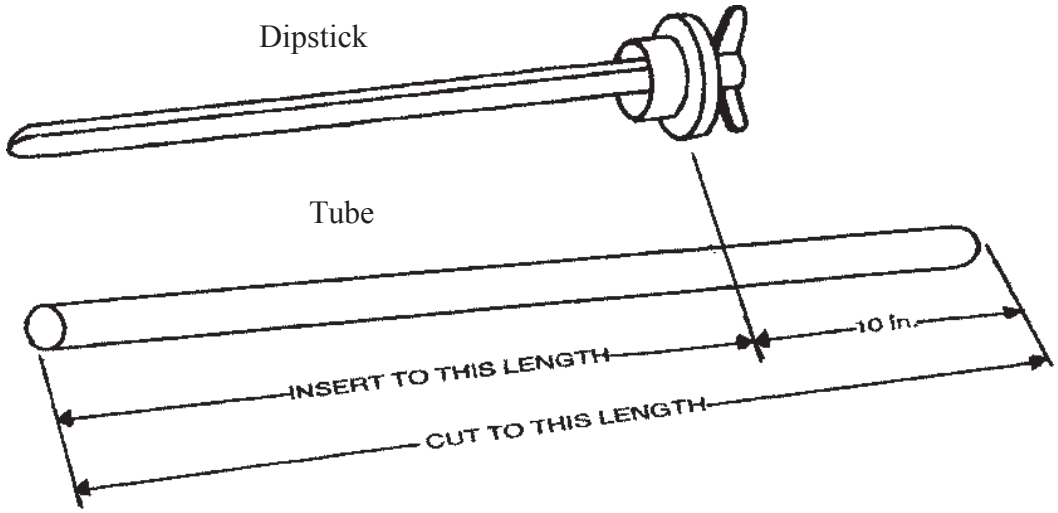
To make sampling easier, many components in AOAP are equipped with a special sampling valve to simplify sample taking. These valves are installed according to instructions found in your equipment TM.

To take a sample with a valve, you may need to start the engine to pressurize the system. Once the oil starts to flow, flush a small amount of oil from the line to clear out contaimnation. Then fill the sample bottle from the valve.



* PUMP METHOD

Sampling from equipment that has no sampling valve takes more time. First, cut the tubing about 10 inches longer than the dipstick.

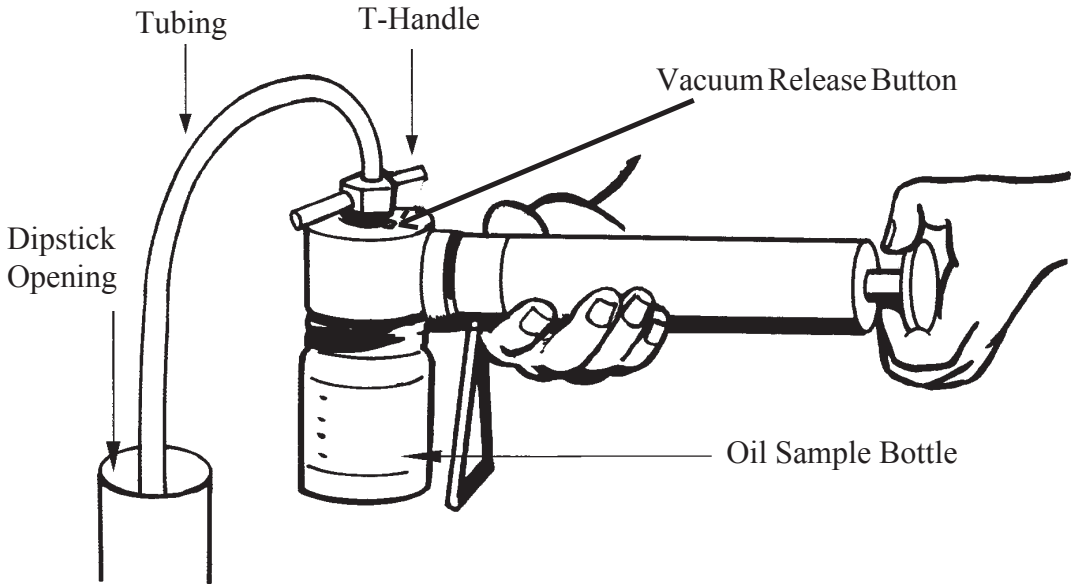


Loosen the T-handle on the pump. Insert the plastic tubing about 2 inches into the bottle. Tighten the T-handle just enough to grip the tubing firmly.

Remove the filler cap or dipstick from the oil reservoir.

Insert the tubing into the reservoir, but **be careful not to let tubing touch bottom.** If the tube touches the bottom, sludge will be picked up, and the laboratory will request another sample.

Pull the pump handle out slowly. Oil should flow into the sample bottle.



Fill the sample bottle to the bottom of the neck or about 1/2 inch from the top of the bottle. Push the vacuum release button when you have enough oil.

Do not let oil get into the pump. If oil does get into the pump, take the pump apart and clean each piece thoroughly with appropriate cleaning solvent. Let it air dry.

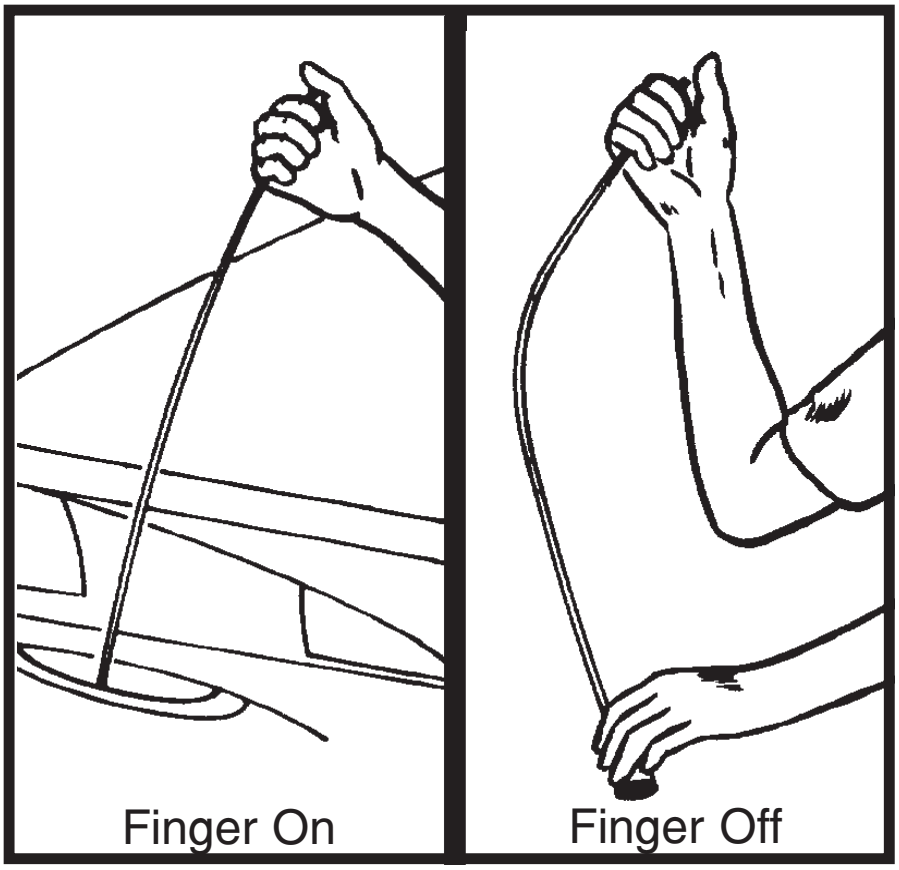
Remove the tubing from the dipstick opening. Unscrew the sample bottle and replace the bottle cap. Use a clean rag or tissue to wipe off any oil on the tip of the tube. Then pull the tube out of the pump head. Discard the tubing.

Whether you take your sample by valve or pump, enter the end item and component serial numbers on the sample bottle and complete the DD Form 2026 or ULLS DA Form 5991-E. Then get the sample, along with the form, to the TAMMS clerk for processing. The TAMMS clerk will see that it is sent to your laboratory by the fastest means available.

TAKING AN AERONAUTICAL OIL SAMPLE

A plastic tube for sampling aeronautical equipment oil is preferred. The tube is used through the oil filler neck or dipstick hole.

Insert the tube into the reservoir. Be careful not to let the tube touch bottom. Allow the tube to fill with oil. Place a finger over the tip of the tube and withdraw it from the reservoir. The tube will be partially filled with oil. Insert the tube into the sample bottle. Release the oil by removing your finger from the top of the tube. Repeat until the bottle is filled within 1/2 inch of the top of the 5/8 ounce (5-dram) glass sampling bottle.



NOTE: Replenish the fluid drained from the component with clean fluid.

Enter the aircraft type/model/serial number, operating hours on the component, component serial number/type/model, type and grade of lubricant used, and date and time sample taken on the label of your oil sample bottle. Complete DD Form 2026 or ULLS DA Form 5991-E . Place the sample and the form

in a plastic bag and send to the laboratory by the fastest means available; e.g., First Class mail or courier.

Certain aircraft components require grease sampling (identified in TB 43-0106). Grease samples will be submitted ONLY in the 3 ounce nonaeronautical plastic sampling bottle. To obtain grease samples, adhere to the specific aircraft TMs.

PERMANENT RELOCATION/TEMPORARY DEPLOYMENT

Anytime a unit relocates, either permanently or through deployment, the following is necessary:

The unit will notify the home base (servicing) laboratory concerning transfer/deployment schedules in advance of departure. Advance notice is required in order to provide the laboratory sufficient time for orderly processing of records for transfer to the new support laboratory.

The losing laboratory will forward equipment AOAP records directly to the gaining laboratory unless directed otherwise.

REMINDER: A special sample is taken before equipment is transferred or deployed.

TRANSIENT EQUIPMENT RECORDS

Transient units are responsible for obtaining complete oil analysis records for their equipment from the losing laboratory and for delivery of the records to the gaining laboratory at the new operating site. If sufficient time is not available before departure, the unit will notify the losing laboratory concerning the relocation, and the losing laboratory will mail all required oil analysis records to the gaining laboratory.

IV AOAP QUESTIONS AND ANSWERS

Q. How do I know if my equipment is enrolled in the AOAP?

A. If it is listed in DA Pamphlet 738-750 or TB 43-0106, or authorized by the PD, AOAP.

Q. If enrolled, what is the next step for submitting samples for my equipment?

A. Submit a sample and a completed DD Form 2026 or ULLS DA Form 5991-E to your supporting laboratory (see Pages 12-14 for areas of support).

Q. Can I sample equipment not listed in DA Pamphlet 738-750 and TB 43-0106.

A. Only equipment/components listed in DA Pamphlet 738-750 and TB 43-0106, or other equipment/components authorized by the PD, AOAP, will be sampled. Exceptions to sampling policy will be through letters of authorization from MACOM level.

Q. Who should take the sample?

A. Anyone may take samples. For best results, local SOPs should provide for training and designating of sampling teams at unit level.

Q. How much oil do I put in the sample bottle?

A. The bottle should be filled to the bottom of the neck (1/2 inch from top of bottle).

Q. Do I always have to take a routine sample at the scheduled date, hour, or miles?

A. You should always try to sample as near the prescribed interval as possible. If it is not possible, a 10 percent variance prior to or after the schedule date, hour, or miles for sampling is permissible for nonaeronautical equipment. For example, the engine on your M35A2 is to be sampled every 90 days. If this falls on 1 Apr, you may sample that component up to 9 days (10 percent of 90 days) prior to 1 Apr or up to 9 days after 1 Apr and still be within prescribed guidance.

Q. Is there a sampling interval variance for aeronautical equipment?

A. Yes. An example of aeronautical allowable tolerance is if the sampling interval is 25 hours, the allowable sampling range is 22-28 hours. When sampling hour intervals are performed within the plus or minus allowable range, the schedule for the next sampling intervals will not be affected. For example, a sample with a 25 hour interval, due at 100 aircraft hours and taken at 97 hours or 103, the next sample will still be due at 125 hours. However, when the plus or minus range is exceeded, scheduling of the next sample will be affected. That is, a sample with

a 25 hours interval, due at 100 aircraft hours and taken at 95 hours, the next sample will be scheduled at 120 aircraft hours. (When a sampling interval is 25 hours, the plus or minus 3 hour range applies at each incremental sample.) The allowable range still remains at plus (+) or minus (-) 3 hours. Variances for aeronautical equipment are listed in TB 43-0106.

Q. Should sampling be a part of scheduled routine maintenance services.

A. Yes, for both aeronautical and nonaeronautical equipment.

Q. How long does it actually take to obtain a sample?

A. That depends on the method used. In general, the only method that should take more than 5 minutes is the tube method.

Q. Why and how long should I hold onto a processed DD Form 2026 or ULLS DA Form 5991-E after I receive it from the laboratory?

A. The processed DD Form 2026 or ULLS DA Form 5991-E is your proof that a sample has been taken and analyzed (as of a certain date). It contains accurate management information, such as the component/end item model/serial number/hours since overhaul and oil change. When it is time to take your next sample, simply pull out your old DD Form 2026 or ULLS DA Form 5991-E, copy the end item and update the hours since overhaul and oil change on a new form. That way half of the oil analysis request is already filled out. This reduces the chance of submitting incorrect management information to the laboratory. Always file your most recently processed DD Form 2026 or ULLS DA Form 5991-E, the one with laboratory results, and discard the previous one.

Q. Must I always take a "hot" sample?

A. No. If you operated the equipment within the last 30 days, you can take a sample without bringing the equipment to operating temperature. If you have not operated the equipment within the last 30 days, you need to bring the equipment to operating temperature for a "hot" sample. This applies to both routine and special samples. However, if your supporting laboratory recommends a component be operated prior to sampling, you must comply with this recommendation. Basically, use common sense. If the weather is cold, the oil in your equipment may be too thick for the oil sampling pump to draw oil into the sample bottle or for the oil to flow freely through the sampling valve into the sample bottle. If so, warm up the equipment to get the oil flowing so that you can take the sample.

Q. What is laboratory response time?

A. The laboratory response time for routine samples, excluding weekends and holidays, is the interval of time that begins when the laboratory

gets the oil sample and ends when the unit which submitted the sample has been advised of the results. For aeronautical samples, the laboratory maximum response time is 24 clock hours (1 workday); for nonaeronautical samples, 72 clock hours (3 workdays).

However, if a sample is annotated "Special", the maximum response time is 24 hours.

Q. What is the sample turn-around time?

A. The sample turn-around time is the interval of time that begins when the oil sample is taken and includes sample delivery and analysis, evaluation of analytical results, and ends when the submitting unit is notified of sample results (normal or abnormal). NOTE: Laboratory response time (receipt, analysis, evaluation and notification) is a part of the sample turn-around time.

Q. If a tactical wheeled vehicle is scheduled for a mission which would cause it to exceed its 100 hrs/1000 miles sampling interval, when should the equipment be sampled?

A. An oil sample should be taken before departure and submitted to your regularly assigned laboratory with a note in the remarks block of the DD Form 2026 or ULLS DA Form 5991-E requesting priority analysis. The laboratory will provide your unit with the results and an oil analysis historical record. Prior to departure your unit should coordinate its oil analysis requirements with the laboratory nearest its destination. Upon arrival at your destination, if your 1,000-mile interval has been reached, send an oil sample (and the component's oil analysis historical record) to the new servicing laboratory.

Put a note in the remarks block of the DD Form 2026 or ULLS DA Form 5991-E stating that your vehicle is on a mission away from its home station and that priority consideration is requested in the analysis. The AOAP laboratory will provide you with an oil analysis record for your deployed vehicle. This procedure should be reversed when returning to home base. The oil analysis records should be turned in to your regular laboratory.

Q. Can the laboratory deadline a vehicle?

A. A laboratory recommendation to remove equipment from service is administrative in nature. The removal gives maintenance the chance to evaluate the condition of the suspect component. Compliance with a laboratory recommendation may or may not involve deadlining the equipment. The decision to deadline a vehicle is the responsibility of the unit commander.

Q. What happens if we do not comply with laboratory recommendations?

A. Laboratory recommendations are not made unless something appears to be wrong with your equipment. So, the worst thing that could happen is that you might lose an engine or have an

aircraft system or component/module failure. Then, negligence to take appropriate and timely repair action could result in a statement of charges, and/or report of survey, and disciplinary action.

Q. Can the laboratory tell if maintenance is performed?

A. Yes. When the oil is changed, for example, the concentration of wear elements is cut approximately in half for some components. When air induction system leaks are fixed, dirt levels decrease. If several samples are taken from the same piece of equipment or from an oil drum instead of from the equipment, resamples will be requested since the combination of wear elements won't match previous samples. If maintenance is repeatedly neglected, and an engine or aircraft system or component/module is lost, the oil analysis record is evidence of that neglect.

Q. Are DA Forms 3254-R issued for resamples and oil changes.

A. No. DD Forms 2026 or ULLS DA Form 5991-E are used for this purpose.

Q. When are DA Forms 3254-R issued?

A. When maintenance actions are recommended such as to clean/service air filters, inspect/repair fuel injection nozzles, inspect/repair engine and transmission assemblies, etc.

Q. What if an item of ground equipment has no hour meter? How do I schedule my samples and report usage to the laboratory?

A. Use the formula, 10 miles or 16 kilometers = 1 hour of operation. For example, a 2 1/2-ton truck should be sampled every 90 days or 100 hours, you should sample every 90 days or 1,000 miles if there is no hour meter. (The sampling interval varies for different categories of equipment.)

Q. May we hold samples until we get a full box?

A. No. The sooner the laboratory gets your sample, the better, especially aircraft samples. If you are experiencing delays beyond your control, contact your installation AOAP monitor.

Q. Just how important is the installation AOAP monitor?

A. It's very important. That role is critical to a successful program. The installation monitor is the point of contact between the command group and the laboratory. From a management point of view, the AOAP monitor means the difference between an effective and an ineffective program. Monitoring the AOAP process at an installation is a full-time job.

Q. Should equipment be sampled if it is not used? Equipment in administrative storage, for example.

A. No. AOAP is for operational equipment. Equipment should be sampled prior to storage and immediately before activation for use.

Q. How do I mark a special sample?

A. Band the bottle with red tape or something similar, as instructed in DA Pamphlet 738-750 or TB 43-0106.

Mark the border of the DD Form 2026 or ULLS DA Form 5991-E with red felt tip marker and write SPECIAL in the remarks block. This gives a sample priority at the laboratory.

Q. Who can I contact for assistance and improvements for AOAP operations at my command?

A. The most readily available source for information and assistance is your local AOAP installation monitor. If additional information is needed, contact your respective command AOAP coordinator at these addresses:

Commander
U.S. Forces Command
ATTN: AFLG-LSM
1777 Hardee Ave
Fort McPherson, GA 30330-6000

Commander
U.S. Army Pacific Command
ATTN: APLG-MM
Fort Shafter, HI 96858-5100

Commander
U.S. Army Operations
Support Command
ATTN: AMSIO-WMP
Rock Island Arsenal, IL
61299-6000

Commander
U.S. Army ACALA
ATTN: AMSTA-AC-MA
Rock Island, IL 61299-6000

Commander
U.S. Army Training
& Doctrine Command
ATTN: ATBO-HM
Fort Monroe, VA 23651-5000

Commander
U.S. Forces Korea
G4, PSC 303, ATTN: EADJ-MS-M
Bldg 2474, Rm 204, Box 29
Unit 15236
APO AP 96204

Commander-in-Chief
U.S. Army Europe & Seventh Army
ATTN: AEAGD-MD-P
Unit 29351
APO AE 09014-0100

The PD, AOAP, will be glad to provide any assistance necessary. The mailing address is: Commander, USAMC Logistics Support Activity, ATTN: AMXLS-LA, Redstone Arsenal, AL 35898-7466, or call DSN 645-0869, commercial (256) 955-0869. If you would rather send a TWX, address it to CDRLOGSA REDSTONE ARS AL//AMXLS-LA//. The e-mail address is aoap@logsa.army.mil

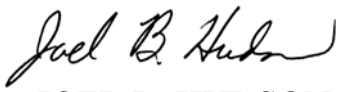
AOAP Points of Contact

	Telephone Number
Program Director HOTLINE	**DSN 645-0869** **Commercial (256) 955-0869**
Laboratory	_____
Installation Monitor	_____
GS Maintenance Officer	_____
DS Maintenance Officer	_____
Company-level Monitor	_____
Unit Maintenance Officer	_____
AOAP Coordinator	_____

By Order of the Secretary of Army:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

Official:



JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army

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